

Geographic distribution of *Physalaemus cicada* Bokermann, 1966 (Anura: Leiuperidae) in Northeastern Brazil

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ABSTRACT: We The leiuperid genus *Physalaemus* is widespread in South America. The Maracas dwarf frog *Physalaemus cicada* occurs in southeastern and northeastern Brazil, mainly in Caatinga biome. Herein, we updated the distribution of *P. cicada*, presenting new data on distribution on Ceará, Pernambuco, Piauí and Rio Grande do Norte states, Brazil.

The Neotropical leiuperid genus *Physalaemus* Fitzinger, 1896 comprises 45 described species (Frost 2011), widely distributed in South America, east to Andes (Nascimento *et al.* 2005). The Maracas dwarf frog *Physalaemus cicada* Bokermann, 1966 (Figure 1), is distributed mainly at northeastern Brazil, with records also at southeastern Brazil in state of Minas Gerais (Nascimento *et al.* 2005; Silveira 2006; Linares and Mello 2011; Frost 2011). It can be found in the Caatinga Biome in the states of Alagoas (Lisboa e Haddad 2009), Ceará (Nascimento *et al.* 2005; Loebmann and Mai 2008), Bahia (Bokermann 1966; Nascimento *et al.* 2005; Santana and Juncá 2007), Paraíba (Vieira *et al.* 2007), Pernambuco (Borges-Nojosa and Santos 2005), Rio Grande do Norte (Jorge and Freire 2012) and Sergipe (Caldas *et al.* 2010), also occurring at localities in transition zones between the Cerrado and Caatinga Biomes in Minas Gerais (Nascimento *et al.* 2005; Linares and Mello 2011) and Piauí states (Benício *et al.* 2012).

Herein, we updated the distribution of *Physalaemus cicada* at northeastern Brazil, extending the known distribution of the species in Ceará, Pernambuco, Piauí and Rio Grande do Norte states, providing a new geographic distribution map for the species (Figure 2, Table 1). Specimens were collected by hand or pitfall-traps with drift-fences during herpetological surveys at several localities from December 2009 to February 2012. Voucher specimens were deposited at “Coleção Zoológica de Vertebrados da Universidade Federal de Mato Grosso” (UFMT-A, Cuiabá, Mato Grosso, Brazil): PIAUÍ - Brejo do Piauí municipality (8°13'36"S, 42°49'51"W; UFMT-A 11165; 11241, 11215); and at the “Coleção Herpetológica da Universidade Regional do Cariri” (URCA-H, Crato, Ceará, Brazil): CEARÁ: municipality of Barro (07°05'29.1" S, 38°43'31.3"W; URCA-H 686-687), Várzea Alegre (06°52'20.5"S, 039°13'03.8"W; URCA-H 3001-3002), and Acopiara (06°12'22.8"S,

039°30'14.6"W; URCA-H 3181-3183), municipality of Farias Brito (06°78'32"S, 39°53'31"W; URCA-H 5187, 5201-5205), municipality of Missão Velha (07°15'58.2"S, 39°04'55.8"W; URCA-H 5456), municipality of Aiuaba (06°39'41.7" S, 40°06'23.3"W; URCA-H 5319-5324); PERNAMBUCO: municipality of Ouricuri (08°07'55.7"S, 040°05'03.2"W; URCA-H 1069,1071); RIO GRANDE DO NORTE: municipality of João Câmara (05°33'S, 35°56'W; URCA-H 2927-2935). Individuals were also recorded calling at Reserva Natural Serra das Almas, municipality of Crateús (5°16'04"S, 40°54'13"W), state of Ceará, municipality of Parnamirim (04°36'78.1"S, 91°06'41"W), state of Pernambuco and at municipality of Guamaré (05°13'8.45"S, 34°41'6.81"W), state of Rio Grande do Norte.

This is the second records of *P. cicada* at Rio Grande do Norte state, extending the known distribution at 140 Km west from the municipality of Santa Maria, state of Rio Grande do Norte (05°50'01.78"S, 35°44'20.37"W) (Jorge and Freire 2012). The municipality of Brejo do Piauí is



FIGURE 1. An adult male of *Physalaemus cicada* collected buried, from Ouricuri municipality, Pernambuco, Brazil. Photo: R.W. Ávila.

the second locality record of *P. cicada* in the state of Piauí, extending the distribution at about 287 Km south-west from municipality of Picos (07°5'15.88"S, 41°24'1.67"W) (Benício *et al.* 2012). Moreover, the new records reported

here fills gaps of distribution of *P. cicada* at Ceará and Pernambuco states and are important contributions to the knowledge of distribution of *Physalaemus cicada* at northeastern Brazil.

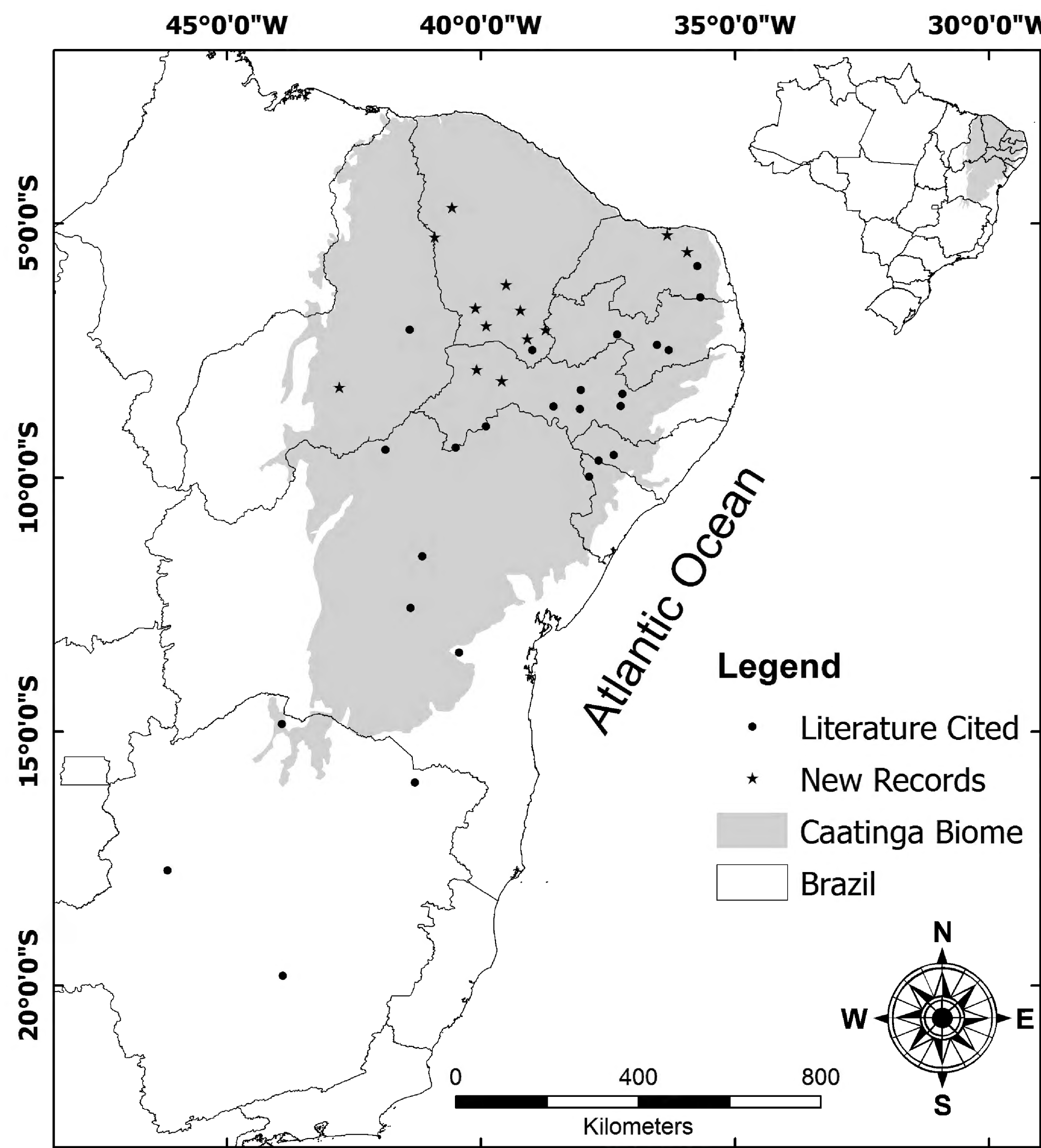


FIGURE 2. Known distribution of *Physalaemus cicada* in the Brazilian states. States abbreviations: MG = Minas Gerais; BA = Bahia; SE = Sergipe; AL = Alagoas; PE = Pernambuco; PB = Paraíba; CE = Ceará; PI= Piauí; RN= Rio Grande do Norte. Star = New Record (see Table 1); Black Circles = Literature data.

TABLE 1. Localities of known distribution of *Physalaemus cicada*.

STATE	MUNICIPALITY	LATITUDE (S)	LONGITUDE (W)	REFERENCE
Alagoas	São José do Tapera	09°33'28"	37°22'51"	Lisboa and Haddad (2009)
Bahia	Maracás	13°26'28"	40°25'51"	Bokermann (1966)
Bahia	Juazeiro	09°24'42"	40°29'55"	Nascimento et al. (2005)
Bahia	Carnaíba	09°27'06"	41°52'53"	Nascimento et al. (2005)
Bahia	Curaçá	08°59'33"	39°53'59"	Nascimento et al. (2005)
Bahia	Lençóis	12°33'47"	41°23'18"	Santana and Juncá (2007)
Bahia	Morro do Chapéu	11°33'08"	41°09'27"	Leite et al. (2010)
Ceará	Brejo Santo	07°29'36"	38°59'14"	Nascimento et al. (2005)
Ceará	Nova Russas	04°41'07"	40°33'56"	Loebmann and Mai (2008)
Ceará	Acopiara	06°12'22.8	039°30'14.6"	New Record
Ceará	Barro	07°05'29.1	38°43'31.3	New Record
Ceará	Várzea Alegre	06°52'20.5	039°13'03.8	New Record
Ceará	Crateús	5°16'04"	40°54'13"	New Record
Ceará	Aiuaba	06°39'41.7"	40°06'23.3"	New Record
Ceará	Farias Brito	06°78'32"	34°53'31"	New Record
Ceará	Missão Velha	07°15'58.2"	39°04'55.8"	New Record
Minas Gerais	Perda Azul	16°00'19	41°17'50"	Nascimento et al. (2005)
Minas Gerais	Matias Cardoso	14°51'17"	43°55'19"	Nascimento et al. (2005)
Minas Gerais	João Pinheiro	17°43'59"	46°10'00"	Silveira (2006)
Minas Gerais	Belo Horizonte	19°48'18"	43°54'18"	Linares and Mello (2011)
Paraíba	São José do Bonfim	07°11'	37°19	Arzabe (1999), Vieira et al. (2007)
Paraíba	Araruna	06°27'13"	25°40'49"	Arzabe et al. (2005)
Paraíba	Cabaceiras	7°29'20"	36°17'93"	Vieira et al. (2007)
Paraíba	São João do Cariri	7°23'26"	36°32'01"	Vieira et al. (2007)
Pernambuco	Betânia	08°16'29"	38°02'03"	Borges-Nojosa and Santos (2005)
Pernambuco	Floresta	08°36'04"	38°34'07"	Borges-Nojosa and Santos (2005)
Pernambuco	Parnamirim	04°36'78.1"	91°06'41"	New Record
Pernambuco	Ouricuri	08°07'55.7"	040°05'03.2"	New Record
Pernambuco	Usina São José	7°49'14"	35°0'44"	Moura et al. (2011)
Pernambuco	Reserva ecológica de Serra Negra	08°34'	38°04'	Moura et al. (2011)
Pernambuco	Parque Nacional do Catimbau	8°35'29.54"	37°14'44.68"	Moura et al. (2011)
Piauí	Brejo do Piauí	8°13'36"	4°46'51"	New Record
Piauí	Picos	07°5'15.88"	41°24'1.67	Benício et al. (2012)
Rio Grande do Norte	Santa Maria	5°50'01.78"	35°44'20.37"	Jorge and Freire (2012)
Rio Grande do Norte	João Câmara	05°33'	35°56'	New Record
Rio Grande do Norte	Guamaré	05°13'8.45	34°41'6.81"	New Record
Sergipe	Serra da Guia	09°58'52"	37°52'05"	Caldas et al. (2010)
Sergipe	Grota do Angico	09°39'50"	37°40'57"	Caldas et al. (2010)

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